

THE STATE OF ILLINOIS
WILLIAM G. STRATTON, GOVERNOR
DEPARTMENT OF
REGISTRATION AND EDUCATION
VERA M. BINKS, DIRECTOR
SPRINGFIELD
BOARD OF NATURAL RESOURCES
AND CONSERVATION
VERA M. BINKS, CHAIRMAN
GEOLOGY - W. H. NEWHOUSE
CHEMISTRY - ROGER ADAMS
ENGINEERING - ROBERT H. ANDERSON
BIOLOGY - A. E. EMERSON
FORESTRY - LEWIS H. TIFFANY
UNIVERSITY OF ILLINOIS
PRESIDENT - GEORGE D. STODDARD
SOUTHERN ILLINOIS UNIVERSITY
PRESIDENT - DELYTE W. MORRIS



STATE GEOLOGICAL SURVEY DIVISION

M. M. LEIGHTON, CHIEF
131 NATURAL RESOURCES BUILDING
UNIVERSITY OF ILLINOIS CAMPUS
URBANA

GEOLOGIC REPORT ON GROUNDWATER POSSIBILITIES FOR INDUSTRIAL SUPPLY NEAR GLENVIEW, NORTHWESTERN COOK COUNTY SECTIONS 11, 12, 13 T. 41 N., R. 12 E. SECTIONS 33, 34, 35 T. 42 N., R. 12 E.

By

John W. Foster, Assistant Geologist
Division of Groundwater Geology and Geophysical Exploration

This report concerns geologic conditions controlling industrial groundwater supplies in the Glenview area, northwestern Cook County, bounded by Lake and Milwaukee Avenue, Dempster Street and Michigan Road. This area includes most of Sections 11, 12, 13 T. 41 N., R. 12 E. and Sections 33, 34, 35 T. 42 N., R. 12 E. This report assumes the need for approximately 200 G.P.M.

Possibilities in Bedrock and Glacial Drift

The glacial drift is generally 100 to 150 feet thick in this part of Cook County. An east trending buried valley in the limestone surface, central section 13, one-half mile north of Dempster Street, indicates that thickest drift cover and possibly best groundwater possibilities in sand and gravel occur there. However, sand and gravel deposits in this region are likely to be dolomitic and shaly, with angular fragments. The water-yielding potential of these permeable beds is unknown, despite probable wide occurrence through the area in question, but possibly worth consideration.

Possibilities in Bedrock Formations Outside the Des Plaines Complex Where Conditions are Normal.

In most of the area east of Skokieville Road and north of Glenview Road geologic conditions in the bedrock are probably normal, that is the bedrock formations have their usual sequence and thicknesses. (As opposed to the southwest part of the area within the Des Plaines Complex where conditions and water possibilities are abnormal).

Following is a summary log based in part on sample study of the old Glenview City Well, located near the center of the area in question, NW. 1/4, SE. 1/4, Section 34, T. 42 N., R. 12 E., Miller's S. B. Geiger.



	Thickness	Depth of Base
Pleistocene System		
Soil, yellow and gray clay	37	37
Gravel	10	47
Clay, gray	41	88
Gravel	40	128
Silurian System		
Niagaran dolomite	112	340
Ordovician System		
Kinderhook shale (lat. 373-402)	148	488
Galesville dolomite	100	510
Glasgow-St. Peter sandstone	162	972
Coote dolomite, sandy	53 (approx.)	1025
Cambrian System		
Trempealeau dolomite	140	1165
Fremont sandstone and shale	60	1225
Galesville sandstone	175	1400
Bu. Chalk shale and sandstone	31 plus	1431 T.D.

The Niagaran dolomite in the area is well-cracked and is water-yielding at practically all locations. The wide occurrence of water-bearing sand and gravel above the rock in the region may be an important factor in the hydrologic characteristics of the Niagaran formation, whether or not the gravels are themselves important for well construction.

Most deeper wells penetrate to the St. Peter sandstone or to the Galesville formation. These formations dip easterly at the rate of about 25 feet to the mile, so locations east and west of the Glenview well site, log given above, would show some departure from the depths indicated.

Possibilities in Bedrock Formations in the Des Plaines Complex

In the southwestern part of the area, specifically the western part of Section 11, T. 41 N., R. 12 E., west of Glen Acres Golf Club in Section 34, T. 42 N., R. 12 E., and south of Glenview Road in Section 33, T. 42 N., R. 12 E., the rock formations are likely to be badly distorted and groundwater conditions are extremely unpredictable. In this part of the Des Plaines Complex the top bedrock formation is generally found to be Maquoketa shale or Galesville dolomite in the north, Kinderhook shale in the south. Example: Our log of a well near the junction of Gulf Road and Milwaukee Avenue (SW. 1/4 Section 11, T. 41 N., R. 12 E.) indicates 144 feet of drift and 346 feet of Kinderhook shale, underlain by Niagaran (?) limestone. This may or may not be typical of the area in question. Deep sandstone formations in the Complex area are not likely to rest at normal depths or in normal dip. Drilling in the area is venturesous but not necessarily unsuccessful. The Geological Survey is particularly anxious to obtain more samples of the area in any drilling undertaken, together with driller logs noting any unusual geologic condition.

Summary: The area bounded by Lake and Milwaukee Avenue, Despoter Street and Washington Road has good possibilities for industrial water supplies, possibly in sand and gravel above rock, but more definitely in Niagaran dolomite, St. Peter and Galesville sandstones. The southwestern part of the area lies in the Des Plaines Complex, where bedrock conditions are quite unpredictable and where water possibilities are uncertain but not necessarily unfavorable.

STATE OF ILLINOIS
WILLIAM G. STRATTON, GOVERNOR
DEPARTMENT OF
REGISTRATION AND EDUCATION
VERA M. BINKS, DIRECTOR
SPRINGFIELD
BOARD OF NATURAL RESOURCES
AND CONSERVATION
VERA M. BINKS, CHAIRMAN
GEOLOGY - W. H. NEWHOUSE
CHEMISTRY - ROGER ADAMS
ENGINEERING - ROBERT H. ANDERSON
BIOLOGY - A. E. EMERSON
FORESTRY - LEWIS H. TIFFANY
UNIVERSITY OF ILLINOIS
REPRESENTING THE PRESIDENT -
W. L. EVERITT
SOUTHERN ILLINOIS UNIVERSITY
PRESIDENT - DELYTE W. MORRIS



Kathy STATE GEOLOGICAL SURVEY DIVISION

July 19, 1956

JOHN C. FRYE, CHIEF
121 NATURAL RESOURCES BUILDING
UNIVERSITY OF ILLINOIS CAMPUS
URBANA

OCCLUSIVE REPORT ON THE GROUNDWATER POSSIBILITIES FOR A DOMESTIC SUPPLY IN SECTION 20, T. 42 N., R. 12 E., COOK COUNTY

By

Lidia Salkrugg, Assistant Geologist
Division of Groundwater Geology and Geophysical Exploration

This report is prepared at the request of Mr. Lee Branscome, Cartoonists, Inc., 100 East Ohio, Chicago, Illinois.

Attached is a copy of Circular 198 "Groundwater Possibilities in Northeastern Illinois" which gives a general description of the occurrence of groundwater in the northeast part of the state. The location in question is marked in red on the maps in pages 9, 11, and 13. A general description of the occurrence of groundwater in Cook County can be found in page 14.

The possibility of obtaining a groundwater supply in sec. 20 is good. A deposit of unconsolidated glacial drift material about 125-145 feet thick covers the dolomite (limestone like) bedrock in the area in study. The unconsolidated glacial drift material of this area is composed of non-water-yielding clay with interbedded water-yielding sand and gravel deposits. These sand and gravel deposits are present at two horizons. One shallow, at a depth ranging between 60 and 75 feet below land surface, and a deeper one below a depth of about 110 feet. We have record of a well drilled in the William Beck property in section 20 which was finished in gravel at a depth of 130 feet and one in the Pengal property which was finished in gravel at a depth of 131 feet. It is likely that this deeper deposit of gravel, which is the source of water in the Pengal and Beck farms, will be a source of groundwater at the location in question.

Below the unconsolidated glacial drift the dolomite bedrock is a source of groundwater to most of the domestic and farm wells in the area. We have record of a well drilled in the Kless property in section 20 which was finished in limestone at a depth of 155 feet and one in the Masser property which was finished in limestone at a depth of 154 feet. The limestone is water-yielding when solution developed cracks or crevices are encountered in drilling and we cannot predict the water-yielding character of this formation prior to actual drilling. However, from the study of the logs of wells in this area it appears that the dolomite in this region is well creviced and is likely to be a source of groundwater for domestic and farm supply.

In summary the groundwater possibilities at the location in study are good and a source of groundwater may be encountered either in the lower part of the glacial drift, that is, at a depth ranging between 110 and 140 feet below land surface or in the upper part of the dolomite bedrock. It is likely that a source of groundwater will be obtained at this location at a depth shallower than 150 to 170 feet.